

GRAPHIC MATERIALS FOR BLIND CHILDREN
IN CHICAGO SCHOOLS

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by William J. Page



• WILLIAM J. PAGE, M.A., is principal of the Wendell Phillips High School of Chicago, Illinois.

He received his Ph.B. degree from the University of Chicago, and his M.A. degree from Loyola University of the same city. The fields in which he specialized were vocational education, and the development of instructional materials for the education of the blind.

Besides having taught and done administrative work in

the regular grades, he has done special teaching for experimental purposes in the instruction of blind and sight-saving children.

His professional affiliations include the Chicago Principal's Club, the American Vocational Association, the American Foundation for the Blind, the National Society for the Prevention of Blindness, and the National Education Association.

ONE NOT FAMILIAR with the educational opportunities available to the blind is astonished to see the sightless children in their elementary and high school classrooms making use of a variety of graphic materials. In the Chicago public schools, books, maps, relief globes, number slates, graphs, diagrams, mathematical tables, and construction materials are specially prepared at the Printing Office for the Blind which the Board of Education maintains the year around. A visit to the Felsonthal Public Elementary School in which the printing shop is located, as well as one of the special rooms for teaching the blind, will well repay those who are interested in seeing how these materials are produced, and how a specially certificated teacher applies them in her daily classroom work.

As you enter this unique shop and laboratory, you miss the customary equipment of an ordinary print shop. There are no type cases, and no odor of printer's ink. Around its walls are wooden shelves built in *pigeon-hole* fashion—each compartment holding about seventy-five embossed brass plates, eleven inches square. Each group of plates represents a volume of some book. It requires, approximately, sixteen such volumes for an ink-print book of five hundred pages.

The raised or embossed points of these soft brass plates are stereotyped on a foot-operated machine having six keys which resemble the keys of a piano. By pressing down various combinations of these keys on the stereotype machine, the ink-print matter of a book is coded into Braille on brass plates. For the lower grades, each ink-print word is transcribed into Braille, letter by letter, but for the higher grades, and for high school, certain Braille characters represent whole words and combinations of letters. This is known as contracted Braille. A certain degree of contraction is classified as Grade 1½ Braille. Grade 2 Braille is highly contracted, and is used for high school and college books. The contractions used resemble a system of shorthand.

Impressions of these plates are made with paper that has been immersed in water before going through the press—a certain degree of moisture in the paper produces a more lasting copy. A soft rubber mat on the press prevents the raised characters on the brass plates from being flattened. Thousands of impressions from some of these plates have not had any apparent effect on the raised characters on the plates. Some of the books, like the primers, for instance, get hard usage, but the dots do not get rubbed off to any great degree. More often a book is discarded for sanitary reasons than for wear.

More interesting than the stereotype machine is a map-making machine. The map to be embossed is selected from an atlas, geography, or history and a scale drawing of it is made on a sheet of paper, the size of the brass plate. Exact reproduction of ink-print maps is impossible. Rather than crowd too many geographic features on a given map, only a few essential ones are selected. If detail is desired, more than one plate is used. When the pencil copy of the map is finished it is pasted onto the brass plate and is embossed dot by dot or line by line on the map machine. Bodies of water, such as lakes, seas, and oceans, are represented by a surface roughened by means of small dots. Dotted lines indicate rivers and canals. Continuous smooth lines stand for boundary lines between political divisions. A series of small arcs of a circle indicates a mountain system. Cities are desig-

with the school and that Bobby had made exceptional progress.

Next, is the case of a father who was dissatisfied with the progress of his eight year old son in the regular school, and who placed him in a private school. It was soon found that Harry, although a clever child, had almost no habits of work and no capacity for concentration. He was admitted in January and by June of that year he had accomplished a good deal. For this reason, he was promoted to the next grade. On his return in September it was found that he had reverted to his former habits; in addition, it was learned that he had been ill during the summer. The father became very anxious for his boy to be given special coaching so that at the end of the year he might enter a school where his father had been one of the first students. An effort was made to speed up Harry's progress, with the result that his advancement became less rapid and he came to dislike the school. At Christmas, the father decided for financial reasons to return Harry to his former school since he was not making the exceptional progress to warrant the expenditure of an extra outlay. This boy was not lacking in special ability, but he was too emotionally unadjusted to profit by forced methods.

Then there is the child gifted along special lines. Helen had artistic ability and her mother had pampered her to such an extent that she never felt herself expected to do what she did not like to do. In the private school she was allowed to major in art, but it was soon apparent that she was lacking in the rudiments of education and an effort was made to interest her along these lines. Since this required energy on her part, she gave little attention and spent all her time on her art work which required little effort. When this situation was pointed out to her mother, the latter said that she had always found it hard to get Helen to do anything she did not want to do. She had allowed her to spend all her time at art. Culturally, the girl was very backward, but since the mother could give no assistance, the girl was allowed to continue as a special art student.

Often a gifted student is badly adjusted, for he does not mix with his associates, never plays games, is highly introversive and selfish, and is really no asset to a school. In my school, students are rated each week by our *Personality Rating Chart*, and such a student rates low in cooperation. For the first time, perhaps, he sees himself given a low rating and for that reason he resents it very much. In such cases, it will be found that the parents will be just as resentful and will feel that either son or daughter, as the case may

be, is not being given a square deal. The student, knowing the attitude of the parents, becomes all the more uncooperative. Such individuals usually put all the emphasis on intellectual development. Let us consider such a case:

Russell was a youth of fifteen years who felt that he was not receiving the requisite consideration in the regular school, and transferred to my private school. Here he was found to be selfish and interested only in his own academic progress. The weekly rating did not place him very high. He resented his standing, but conformed to such an extent that his rating improved. Towards the end of the term, his father took him on a week's fishing trip. The party consisted of grown-ups, and Russell considered himself a man. On his return, he was unbearable in manner, and, of course, his marks dropped to such an extent that at the closing exercises he did not receive a certificate stating that he was an all-round student. His parents were so angry that they argued the matter with me. When they were told the situation, they stated that they would not send him back in the fall—and they kept their word.

Fortunately for private schools, all parents of gifted children are not so foolish and so ununderstanding as these mentioned above. There is a strong tendency for gifted children to be introversive, and to seek the limelight, but many parents there are who are wise enough not to encourage these tendencies. They are content to leave the school progress to the school, and not to become meddlers. Our difficulties with gifted children, in my experience, grow out of the fact that parents are too child-conscious; and are constantly checking up on their progress, with the result that they but complicate matters, not only for themselves and the school, but also, for the children themselves.

Chapter Breakfast

by REBECCA G. BARNHART, director,
Pupil Personnel,
Battle Creek, Michigan.

THE CHAPTER BREAKFAST was attended by twenty-four persons representing states from New Hampshire to Wyoming. The chairman of the meeting was Miss May Bryne, supervisor of special education in Minneapolis. The occasion was primarily for reports of the activities of the various local groups.

From the reports given it was evident that interest in chapter activities is increasing rapidly. New chapters are being formed and new activities are being started. A few chap-

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nated by letters. The course of a river is made clear by placing a number near its source and at its mouth. Two or three pages of explanation, called the map key, accompany each map.

The map-making machine is also used to make the plates for all diagrams or graphs that may appear in an algebra, geometry, or geography. Appliances that are attached to the machine assist in constructing perfect lines, circles, squares, polygons, etc. In the making of these plates simplicity is again the guide, for too many lines lead to confusion. Ordinary geometries present the Pythagorean theorem in one diagram while we find it of greater advantage to teach this proof from two diagrams.

Elementary arithmetic is taught by means of a Braille number slate with one-half inch cubes upon whose faces are raised characters to represent Braille numbers. The number slate is made up of one hundred forty-four cells which are just large enough to hold the cubes in place. All ten numbers¹ are on each of the cubes. A child doing a problem has about one hundred of these cubes and soon learns the numbers on the faces of the cubes, and can put a number into a slate as readily as a sighted child might write it upon paper.

Another device prepared here is the relief globe. Six inch fiber globes used in the classrooms for seeing children are easily adapted for use for the blind. Glue is coated over the land surfaces and then fine sand is sprinkled into the glue. After this hardens the process is repeated again and again until the desired height is obtained.

1. Although a cube has only 6 faces, some faces can be used for more than one number by revolving the cube.

Dissected maps cut from quarter inch plywood are also made in the shop. These serve for recreation as well as for instruction. Brass-headed escutcheon pins nailed into each piece to represent Braille dots tell the name of the state or country and thereby guide the blind child in putting this map together.

For map interpretation you might consult with the trained teacher whose responsibility it is to teach the use of graphic materials. The blind child in the public school is with seeing children in the regular classroom most of the day, and comes to the special Braille room only part of the time. She will tell you that several things must be kept in mind in developing map appreciation on the part of the pupil.

First, a sense of direction must be developed in the child before any satisfactory work with maps can be done. Too often the terms, *north*, *east*, *south*, and *west* mean nothing to the young blind child. He is taught direction with objects in the room and streets and buildings in the



A Braille Map of Illinois

neighborhood. The pupil is taught to measure with Braille rulers and to determine the distance between two cities on the map and then change this distance into miles according to the scale of the map.

The roundness of the earth, the position of the continents, the oceans, the climatic zones, and other matters of general nature are dwelt upon. The ideas gained from the globe are carried over to the Braille map of the world. The pupil is told that his map represents the surface of the earth flattened out, and that the smooth surface the continents, and the roughened surface the oceans with which he became familiar in his study of the globe.

Next, the map of North America is presented. At this point, the pupil is trained in the

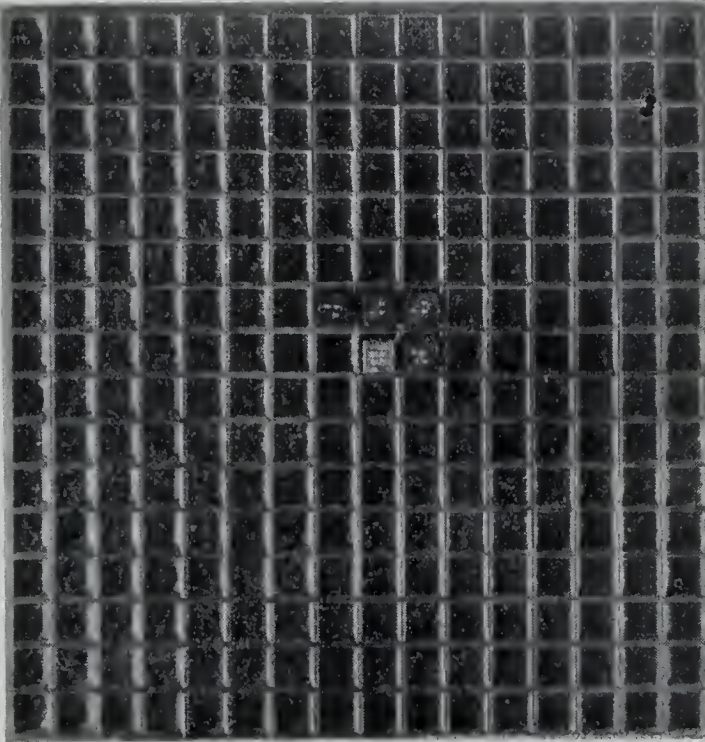
recognition of the smooth boundary lines, the dotted river lines, and the little curves representing mountains. He is shown how to study so that he may tell what oceans touch North America; in what direction the two great mountain systems extend; where the Great Lakes are; what the position of the Mississippi River is; and how the political divisions of the continent are situated. With emphasis on these general features, the other continents are taken up in a similar way.

When a consideration of the various state groups, and of the United States as a whole has been reached, a more intensive study of the map begins. The pupil is asked to refer to the map key, and to master certain details without aid of the teacher. The task assigned may require him to locate the chief cities of the United States and of the various state capitals; to name the particular states, and to give the names of the states that border these.

From this point on, map study, although necessitating the attention of the special teacher, is dependent upon the geography course in the various grades of the schools. The Braille map material now available in Chicago comprises maps of the following: the World, the Continents, the United States, state groups, several of the seaport cities, Canada, Alaska, Mexico, Central America, the West Indies, the British Isles, France, Germany, groups of smaller European countries, China, and groups of Asiatic and African countries. Maps for use in the study of ancient history also have been prepared. Although this list should be greatly enlarged, it is ade-

quate when utilized to the full, for thorough work in both elementary and high school grades.

Dr. William H. Johnson, Chicago's superintendent of schools, has approved several recommendations for the expansion of the work of the Blind Department this year, and under the direction of his assistant superintendent, Major Frank L. Beals, a greater contribution to the education of all of Chicago's handicapped children is expected.



A Braille Number Slate

Five cubes have been inserted ready for computing the product of 74×400 . Note that the "4" and the "0" are represented on the same face of the cube. Starting with "4" and rotating the cube to the left three times, one quarter turn each, the following succession of numbers are obtained: 4-6-8-0. The numbers "2" and "3" are represented by another face of the cube, and "5" and "9" by a third face. The three remaining faces represent 1-7- (decimal), respectively.

Chapter Breakfast

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ters hold meetings monthly; some, four times others have only one or two general meetings, supplemented by a number of smaller group discussions.

The activities reported included the publishing of a hand book for new teachers, the addition of films to film libraries, studies on remedial reading, visits to institutions,

publishing of news letters, collecting of vital statistics concerning special education, arranging programs to which interested outside persons are invited, and appointing a committee to watch legislation which might affect special education.

In one or two cases where the membership is too scattered to make possible a chapter in one city, a chapter for the state has been formed. In these cases a meeting is held once a year with quite an extensive program planned.

The enthusiasm shown at this meeting was indicative of the progress and development being made in the field of special education.

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